

REMARKS

Claims 1-18 are now active in this application.

The indication that claims 7-18 are allowable, and that claim 6 would be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claims is acknowledged and appreciated.

REJECTION OF CLAIMS UNDER 35 U.S.C. § 103

Claims 1-5 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Omizu USPN 5,832,149 (hereinafter, Omizu) in view of Burack USPN 5,582,673 (hereinafter, Burack), and further in view of Ryuzo, USPN 4,546,018 (hereinafter Ryuzo).

The rejections are respectfully traversed.

Omizu discloses a construction where master optical fibers (4) and slave side optical fibers (3) are connected together in an optical switch by using a V-groove-formed member (1). Omizu relates to the connection of end portions of optical fibers and is not concerned with an optical interconnection apparatus where plural optical fibers, which are routed in a two-dimensional plane, are held in place by a protective resin layer, as in the invention of the present application. Described specifically, in Omizu, a groove-formed member (1) is movable in the X-direction and Y-direction so that desired master optical fibers (4) and desired slave-side optical fibers (3) are connected in V-grooves (5). Connection end free sides of the optical fibers, therefore, should **not** be held in place; i.e., fixed by a protective resin layer, although they are temporarily retained by a pressing

member. Furthermore, the slave-side optical fibers (3) are arranged in parallel with each other to make up an optical fiber tape (6), and are not routed as desired.

The optical interconnection apparatus according to the invention of the present application, on the other hand, is not a connector construction for end portions of optical fibers, such as that disclosed in Omizu. The optical interconnection apparatus according to the invention of the present application serves to hold routed plural optical fibers in place by a protective resin layer in order to prevent losing the routing pattern of the routed optical fibers. More specifically, in the invention of the present application, the optical fibers are routed in a desired pattern and in a two-dimensional plane. The optical fibers overlap in two layers or three layers where they intersect each other. The thus-routed optical fibers are held in place by the protective resin layer, so that the optimal fibers in the routed pattern are prevented from being displaced (i.e., a loss in the intactness of the routing pattern).

Accordingly, Omizu and the invention of the present application are totally different in the purpose of holding in place or fixing optical fibers, in the portions to be held in place or fixed, and also in the holding or fixing material.

Burack discloses bonding of optical fibers (26), which are routed on a flexible plastic substrate (29) via a pressure-sensitive adhesive (30), to an encapsulating sheet (13) via a second adhesive layer (31). The construction disclosed in Burack is similar to that of JP 2,574,611 B cited in the specification of the present application, and routed plural optical fibers *are sandwiched between two flexible films such as Kapton films or Myler films*. Burack, therefore, involves such problems as disclosed at page 2, line 10 to

page 3, line 14 in the specification of the present application, for example, the problem that displacements occur in a routing pattern at overlapped portions of optical fibers.

According to the invention of the present application, on the other hand, optical fibers routed in a two-dimensional plane are held in place by embedding them in a protective resin layer of a specific composition to overcome the problems referred to in the specification of the present application. Described specifically, the routed optical fibers are embedded, in their entirety, by a silicone-base material which is curable through a condensation reaction with liberation of an oxime or an alcohol. As a consequence, the invention of the present invention has made it possible to avoid optical fiber displacements, which would otherwise take place at overlapped portions of optical fibers, or air pockets or the like, which would otherwise occur around the optical fibers.

not in
claim

As is readily appreciated from the foregoing, *the flexible films such as Kapton films or Mylar films in Burack are not arranged to hold in place or fix routed optical fibers*, as in the invention of the present application, *but are included merely to sandwich the routed optical fibers for their protection.* Thus, modifying the arrangement of Omizu with the teaching of Burack does not result in an optical interconnection apparatus where a protective resin layer holds the optical fibers in place as required by claim 1.

Ryuzo discloses a curable composition composed primarily of a silicone-modified epoxy resin which contains silicon-bonded alkoxy groups, and also discloses that the curable composition can be used as a coating composition and further that in the presence of moisture, curing of the curable composition occurs to form a film which is firmly adherent to substrates such as various types of metals, plastics and woods. Ryuzo,

however, makes no mention whatsoever about use of the coating composition as a protective resin layer in an optical interconnection apparatus.

It is commonly known that a silicone resin has strong release properties and has low adhesiveness to plastic materials. Use of the above-described coating composition alone as a protective resin layer in an optical interconnection apparatus cannot, therefore, bring about sufficient bonding effect. *The inventors of the present application selected a silicone-base material*, which is curable through a condensation reaction with liberation of an oxime or an alcohol, from a variety of silicone resins, and for the first time, found that *its combined use as a protective resin layer with an adhesive layer composed of an acrylic pressure-sensitive adhesive can achieve good bonding between the protective resin layer and the adhesive layer and between the protective resin layer and the optical fibers, and can also hold optical fibers in place such that the optical fibers are embedded in the protective resin layer.*

Ryuzo makes no mention whatsoever about use of the above-described coating composition as a protective resin layer *in an optical interconnection apparatus* for holding optical fibers in place. Ryuzo indicates only that the silicone-base material employed in the invention of the present application was known to the public. Consequently, Ryuzo does not teach or suggest the optical interconnection apparatus according to the invention of the present application, the optical interconnection apparatus having been fabricated by combining the silicone-base material, which is curable through a condensation reaction with liberation of an oxime or an alcohol, with the acrylic pressure-sensitive adhesive and with the sheath of optical fibers.

Further, it is clear that when the actual disclosure of Ryuzo is considered, there is no realistic motivation that would impel a person of ordinary skill in the art to use the coating composition disclose in Ryuzo, as a protective resin layer in an optical interconnection apparatus, as required by claim 1.

Thus, in view of the disclosures in Omizu, Burack and Ryuzo, it is clear that the present invention only results through the use of improper hindsight consideration. More specifically, without the disclosure of the present disclosure, a person of ordinary skill in the art would not be realistically impelled to combine the disclosures of Omizu, Burack and Ryuzo to meet the terms of the claims. However, Applicants' disclosure may not properly be relied upon to support the ultimate legal conclusion of obviousness under 35 U.S.C. §103. *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561, 227 1 USPQ2d 1593 (Fed. Cir. 1987).

Thus, claims 1-5 are patentable over Omizu, Burack and Ryuzo, considered alone or in combination. Consequently, the allowance of claims 1-5 is respectfully solicited.

Other cited prior art references

Eckberg et al. discloses specific UV-curable silicone-polyether linear block copolymers. Eckberg et al., however, makes no mention about use of such a UV-curable silicone polyether linear block copolymer as a protective resin layer in an optical interconnection apparatus. Eckberg et al., therefore, by no means teaches the invention of the present application.

Dower et al. U.S. Patent 6,151,433

Dower et al. discloses an optical fiber connector making use of a photocurable adhesive. Dower et al., however, makes no mention about such a construction that two-dimensionally routed, plural optical fibers are held in place by a protective resin layer.

Burack U.S. Patent 5,259,0151

Burack ('051) discloses in FIG. 9 a construction in which optical fibers are routed over a flexible plastic substrate (45) with a pressure-sensitive adhesive (46) interposed therebetween the routed optical fibers are encapsulated with a layer (48) of thermoplastic material, and another thin layer (49) of Kapton or the like is arranged over the layer (48) of thermoplastic material. This construction is, however, similar to that mentioned above in connection with Burack ('673), so that for similar reasons mentioned above in connection with Burack ('673), Burack ('051) does not teach or suggest the invention of the present application.

CONCLUSION

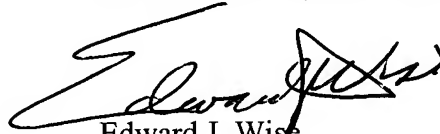
Accordingly, it is urged that the application is in condition for allowance, an indication of which is respectfully solicited. If there are any outstanding issues that might be resolved by an interview or an Examiner's amendment, Examiner is requested to call Applicants' attorney at the telephone number shown below.

10/070,779

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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A handwritten signature in black ink, appearing to read 'Edward J. Wise', is written over the printed name.

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